

State/Industry Ambient Monitoring Network

Air Quality Report

4<sup>th</sup> Quarter 2005

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## SECTION ONE

### DISCUSSION OF MONITORING RESULTS

### Sulfur Dioxide (SO<sub>2</sub>)

There were no exceedances of either the state or the federal standards during the quarter. The maximum 1-hour concentration was 103 ppb on November 23 at Amerada Hess - Tioga #3; the maximum 3-hour concentration was 57 ppb on December 15 at Amerada Hess - Tioga #3; and, the maximum 24-hour concentration was 43 ppb on December 15 at Amerada Hess - Tioga #3. The highest arithmetic mean is 3.8 ppb at Amerada Hess - Tioga #3. All sites achieved at least an 80% data recovery for the period operated.

An SO<sub>2</sub> analyzer was added to the Bismarck Residential site effective October 1.

### Sulfur Dioxide (SO<sub>2</sub>) 5-Minute Average

The maximum 5-minute concentration was 244 ppb on November 23 at Amerada Hess - Tioga #3. All sites achieved at least an 80% data recovery for the period operated.

### Ozone (O<sub>3</sub>)

There was no exceedance of the ozone standard during the quarter. The highest observed 1-hour concentration was 54 ppb on October 1 at Fargo NW. The highest 4<sup>th</sup> highest 8-hour concentration was 43 ppb on October 15 at TRNP - NU. All sites achieved at least an 80% data recovery for the period operated.

An O<sub>3</sub> analyzer was added to the Bismarck Residential site effective October 1.

### Nitrogen Dioxide (NO<sub>2</sub>)

The highest observed 1-hour concentration was 36 ppb on December 20 at Bismarck Residential. The maximum arithmetic mean concentration was 8.4 ppb at Bismarck Residential. All sites achieved at least an 80% data recovery for the period operated.

An NO<sub>2</sub> analyzer was added to the Bismarck Residential site effective October 1.

### Ammonia (NH<sub>3</sub>)

The highest 1-hour concentration was 197.3 ppb on December 12 at Beulah - North . The site achieved an 80% data recovery for the period.

The data is used as part of the ambient data input used by the newer dispersion models.

### Inhalable Continuous PM<sub>2.5</sub> Particulates

There was no exceedance of the 24-hour standard during the quarter. The highest 24-hour concentration was 17.5 µg/m<sup>3</sup> on October 29 at Bismarck Residential. The highest arithmetic mean concentration was 5.5 µg/m<sup>3</sup> at Beulah - North. All sites achieved at least an 80% data recovery for the period operated.

A continuous PM<sub>25</sub> analyzer was added to the Bismarck Residential site effective October 1.

### Inhalable PM<sub>2.5</sub> Particulates

There was no exceedance of the 24-hour standard during the quarter. The highest 24-hour average concentration was 18.7 µg/m<sup>3</sup> on November 27 at Bismarck Residential. The highest arithmetic mean was 6.4 µg/m<sup>3</sup> at Fargo NW. All sites achieved at least an 80% data recovery for the period.

### Inhalable Continuous PM<sub>10</sub> Particulates

There was no exceedance of the 24-hour standard during the quarter. The maximum 24-hour concentration was 49.8 µg/m<sup>3</sup> on October 28 at Fargo NW. The highest arithmetic mean was 13.9 µg/m<sup>3</sup> at Fargo NW. The site achieved an 80% data recovery for the period.

A PM<sub>10</sub> analyzer was added to the Bismarck Residential site effective October 1.





## SECTION TWO

### AMBIENT AIR QUALITY DATA

#### SUMMARIES

COMPARISON OF AIR QUALITY DATA WITH  
THE NORTH DAKOTA AMBIENT AIR QUALITY STANDARDS \*

POLLUTANT : Sulfur Dioxide (ppb)

| LOCATION                | YEAR | SAMPLING PERIOD | NUM OBS | 1 - HOUR        |                 | M A X I M A     |                 | 24 - HOUR    |              | ARITH MEAN | 1HR #>273 | 24HR #>99 | % >MDV |
|-------------------------|------|-----------------|---------|-----------------|-----------------|-----------------|-----------------|--------------|--------------|------------|-----------|-----------|--------|
|                         |      |                 |         | 1ST<br>MM/DD:HH | 2ND<br>MM/DD:HH | 1ST<br>MM/DD:HH | 2ND<br>MM/DD:HH | 1ST<br>MM/DD | 2ND<br>MM/DD |            |           |           |        |
| Amerada Hess - Tioga #1 | 2005 | OCT-DEC         | 2021    | 49<br>11/09:23  | 30<br>11/10:21  | 23<br>11/09:23  | 12<br>11/10:23  | 4<br>10/28   | 4<br>11/09   | 1.4        |           |           | 12.0   |
| Amerada Hess - Tioga #3 | 2005 | OCT-DEC         | 2174    | 103<br>11/23:14 | 80<br>11/15:10  | 57<br>12/15:11  | 57<br>11/15:11  | 43<br>12/15  | 19<br>12/16  | 3.8        |           |           | 21.0   |
| Bear Paw - MGP #3       | 2005 | OCT-DEC         | 2173    | 11<br>11/17:08  | 9<br>12/11:20   | 4<br>11/17:08   | 4<br>12/11:20   | 2<br>11/15   | 2<br>11/17   | 1.0        |           |           | 2.8    |
| Bear Paw - MGP #5       | 2005 | OCT-DEC         | 2185    | 14<br>11/16:19  | 8<br>11/16:17   | 5<br>11/16:20   | 3<br>12/17:20   | 2<br>11/16   | 2<br>12/17   | 1.0        |           |           | 2.6    |
| Beulah - North          | 2005 | OCT-DEC         | 1962    | 16<br>11/25:13  | 15<br>11/08:01  | 9<br>11/23:14   | 9<br>11/25:14   | 3<br>11/25   | 3<br>10/02   | 1.3        |           |           | 13.6   |
| Bismarck Residential    | 2005 | OCT-DEC         | 2087    | 18<br>10/31:09  | 17<br>10/29:18  | 12<br>10/25:14  | 12<br>10/29:20  | 5<br>10/29   | 5<br>12/06   | 1.9        |           |           | 25.2   |
| DGC #12                 | 2005 | OCT-DEC         | 2136    | 15<br>12/11:10  | 14<br>10/25:10  | 10<br>11/08:23  | 10<br>10/08:14  | 4<br>11/08   | 4<br>12/10   | 1.3        |           |           | 10.3   |
| DGC #14                 | 2005 | OCT-DEC         | 2150    | 25<br>10/29:13  | 21<br>11/09:10  | 17<br>11/09:11  | 12<br>10/11:11  | 4<br>11/09   | 3<br>11/05   | 1.4        |           |           | 10.6   |
| DGC #16                 | 2005 | OCT-DEC         | 2141    | 41<br>10/27:19  | 23<br>10/27:16  | 24<br>10/27:20  | 12<br>10/11:14  | 7<br>10/27   | 5<br>11/25   | 1.5        |           |           | 12.1   |
| DGC #17                 | 2005 | OCT-DEC         | 2169    | 37<br>10/26:10  | 32<br>11/25:12  | 20<br>11/25:11  | 19<br>11/25:14  | 6<br>11/25   | 5<br>10/15   | 1.4        |           |           | 8.0    |
| Dunn Center             | 2005 | OCT-DEC         | 1979    | 9<br>11/25:13   | 6<br>12/27:15   | 6<br>11/25:14   | 4<br>12/29:23   | 2<br>11/25   | 1<br>12/29   | 1.0        |           |           | 1.3    |
| Fargo NW                | 2005 | OCT-DEC         | 2110    | 8<br>12/19:01   | 7<br>12/31:16   | 6<br>12/19:02   | 4<br>12/31:17   | 2<br>11/26   | 2<br>12/19   | 1.0        |           |           | 2.8    |
| Hannover                | 2005 | OCT-DEC         | 2175    | 52<br>10/15:21  | 40<br>10/04:13  | 25<br>10/04:14  | 24<br>10/03:14  | 8<br>10/03   | 7<br>10/04   | 1.6        |           |           | 11.9   |
| Lostwood NWR            | 2005 | OCT-DEC         | 2186    | 55<br>12/18:02  | 47<br>12/18:01  | 40<br>12/18:02  | 18<br>12/07:02  | 9<br>12/06   | 7<br>12/18   | 1.8        |           |           | 22.0   |

COMPARISON OF AIR QUALITY DATA WITH  
THE NORTH DAKOTA AMBIENT AIR QUALITY STANDARDS \*

POLLUTANT : Sulfur Dioxide (ppb)

| LOCATION  | YEAR | SAMPLING PERIOD | NUM OBS | 1 - HOUR       |               | M A X I M A   |               | 24 - HOUR  |            | ARITH MEAN | 1HR #>273 | 24HR #>99 | % >MDV |
|-----------|------|-----------------|---------|----------------|---------------|---------------|---------------|------------|------------|------------|-----------|-----------|--------|
|           |      |                 |         | 1ST MM/DD:HH   | 2ND MM/DD:HH  | 1ST MM/DD:HH  | 2ND MM/DD:HH  | 1ST MM/DD  | 2ND MM/DD  |            |           |           |        |
| TRNP - NU | 2005 | OCT-DEC         | 2192    | 11<br>10/01:06 | 9<br>10/01:05 | 6<br>10/01:05 | 6<br>10/01:08 | 2<br>10/01 | 2<br>10/28 | 1.1        |           |           | 4.4    |
| TRNP - SU | 2005 | OCT-DEC         | 2156    | 8<br>11/12:02  | 6<br>11/11:21 | 3<br>11/11:23 | 3<br>11/12:05 | 2<br>11/12 | 1<br>11/11 | 1.0        |           |           | 1.0    |

The maximum 1-hour concentration is 103 ppb at Amerada Hess - Tioga #3 on 11/23:14  
The maximum 3-hour concentration is 57 ppb at Amerada Hess - Tioga #3 on 12/15:11  
the maximum 24-hour concentration is 43 ppb at Amerada Hess - Tioga #3 on 12/15  
The maximum arithmetic mean concentration was 3.8 ppb at Amerada Hess - Tioga #3

\* The air quality standards are:

STATE Standards -

- 1) 273 ppb maximum 1-hour average concentration.
- 2) 99 ppb maximum 24-hour average concentration.
- 3) 23 ppb maximum annual arithmetic mean concentration.

FEDERAL Standards -

- 1) 500 ppb maximum 3-hour concentration not to be exceeded more than once per year.
- 2) 140 ppb maximum 24-hour concentration not to be exceeded more than once per year.
- 3) 30 ppb annual arithmetic mean.

COMPARISON OF AIR QUALITY DATA WITH  
THE NORTH DAKOTA AMBIENT AIR QUALITY STANDARDS \*

POLLUTANT : Sulfur Dioxide 5-Minute Averages (ppb)

| LOCATION                | YEAR | SAMPLING PERIOD | NUM OBS | 5 - M I N U T E M A X I M A |          |     |          |     |          | # HOURS<br>>600 | %<br>>MDV |
|-------------------------|------|-----------------|---------|-----------------------------|----------|-----|----------|-----|----------|-----------------|-----------|
|                         |      |                 |         | 1ST                         | DATE     | 2ND | DATE     | 3RD | DATE     |                 |           |
|                         |      |                 |         |                             | MM/DD:HH |     | MM/DD:HH |     | MM/DD:HH |                 |           |
| Amerada Hess - Tioga #1 | 2005 | OCT-DEC         | 2021    | 108                         | 11/09:23 | 75  | 11/05:21 | 71  | 11/10:21 | 0               | 17.7      |
| Amerada Hess - Tioga #3 | 2005 | OCT-DEC         | 2174    | 244                         | 11/23:14 | 146 | 10/12:11 | 146 | 10/18:10 | 0               | 36.4      |
| Bear Paw - MGP #3       | 2005 | OCT-DEC         | 2173    | 64                          | 11/17:08 | 19  | 12/11:20 | 10  | 11/26:12 | 0               | 6.3       |
| Bear Paw - MGP #5       | 2005 | OCT-DEC         | 2185    | 62                          | 11/16:19 | 22  | 11/16:17 | 19  | 12/01:14 | 0               | 7.3       |
| Beulah - North          | 2005 | OCT-DEC         | 1962    | 59                          | 10/05:18 | 43  | 10/16:05 | 31  | 11/24:08 | 0               | 24.0      |
| Bismarck Residential    | 2005 | OCT-DEC         | 1742    | 29                          | 12/26:18 | 28  | 10/12:17 | 27  | 12/18:11 | 0               | 36.2      |
| Dunn Center             | 2005 | OCT-DEC         | 1979    | 12                          | 11/25:13 | 10  | 11/25:12 | 9   | 11/24:07 | 0               | 4.0       |
| Fargo NW                | 2005 | OCT-DEC         | 2110    | 9                           | 11/26:06 | 9   | 12/31:16 | 8   | 11/26:02 | 0               | 5.8       |
| Hannover                | 2005 | OCT-DEC         | 2175    | 94                          | 10/15:21 | 81  | 11/24:03 | 70  | 11/11:08 | 0               | 21.0      |
| Lostwood NWR            | 2005 | OCT-DEC         | 2186    | 77                          | 12/07:02 | 69  | 12/18:02 | 63  | 12/18:01 | 0               | 32.3      |
| TRNP - NU               | 2005 | OCT-DEC         | 2192    | 12                          | 10/01:06 | 11  | 10/01:05 | 9   | 10/01:04 | 0               | 7.4       |
| TRNP - SU               | 2005 | OCT-DEC         | 2156    | 17                          | 11/12:02 | 13  | 10/25:05 | 9   | 10/25:04 | 0               | 3.7       |

The maximum 5-minute concentration is 244 ppb at Amerada Hess - Tioga #3 on 11/23:14

\* No Standard is currently in effect

COMPARISON OF AIR QUALITY DATA WITH  
THE NORTH DAKOTA AMBIENT AIR QUALITY STANDARDS \*

POLLUTANT : Ozone (ppb)

| LOCATION             | YEAR | SAMPLING PERIOD | NUM OBS | 1 - HOUR     |              | M A X I M A  |              | 8 - HOUR     |              | 4TH | 1HR<br>#>120 | 8HR<br>#>80 |
|----------------------|------|-----------------|---------|--------------|--------------|--------------|--------------|--------------|--------------|-----|--------------|-------------|
|                      |      |                 |         | 1ST<br>MM/DD | 2ND<br>MM/DD | 1ST<br>MM/DD | 2ND<br>MM/DD | 3RD<br>MM/DD | 4TH<br>MM/DD |     |              |             |
| Beulah - North       | 2005 | OCT-DEC         | 2182    | 43<br>10/27  | 41<br>12/09  | 41<br>10/27  | 39<br>12/09  | 39<br>10/28  | 38<br>10/15  |     |              |             |
| Bismarck Residential | 2005 | OCT-DEC         | 2083    | 42<br>10/27  | 40<br>10/16  | 38<br>10/27  | 38<br>10/28  | 36<br>10/15  | 32<br>10/13  |     |              |             |
| Dunn Center          | 2005 | OCT-DEC         | 2147    | 43<br>10/27  | 41<br>10/01  | 39<br>10/27  | 37<br>12/09  | 35<br>10/01  | 35<br>10/14  |     |              |             |
| Fargo NW             | 2005 | OCT-DEC         | 2108    | 54<br>10/01  | 43<br>10/02  | 47<br>10/01  | 43<br>10/02  | 37<br>12/10  | 36<br>10/17  |     |              |             |
| Hannover             | 2005 | OCT-DEC         | 2164    | 45<br>10/27  | 43<br>10/01  | 42<br>10/27  | 40<br>10/02  | 40<br>10/01  | 39<br>12/09  |     |              |             |
| Lostwood NWR         | 2005 | OCT-DEC         | 2190    | 43<br>10/01  | 41<br>10/19  | 40<br>10/15  | 39<br>12/09  | 39<br>10/01  | 39<br>10/27  |     |              |             |
| TRNP - NU            | 2005 | OCT-DEC         | 2191    | 52<br>10/01  | 46<br>12/09  | 45<br>12/09  | 44<br>10/27  | 43<br>10/01  | 43<br>10/15  |     |              |             |
| TRNP - SU            | 2005 | OCT-DEC         | 2156    | 48<br>10/01  | 47<br>10/15  | 45<br>10/01  | 44<br>12/09  | 41<br>12/11  | 40<br>12/10  |     |              |             |

The maximum 1-hour concentration is 54 ppb at Fargo NW on 10/01  
The 4th highest 8-hour concentration is 43 ppb at TRNP - NU on 10/15

\* The air quality standards for ozone are:

STATE - 120 ppb not to be exceeded more than once per year.

FEDERAL - Fourth highest daily maximum 8-hour averages for a 3-year period not to exceed 80 ppb.

COMPARISON OF AIR QUALITY DATA WITH  
THE NORTH DAKOTA AMBIENT AIR QUALITY STANDARDS \*

POLLUTANT : Nitrogen Dioxide (ppb)

| LOCATION             | YEAR | SAMPLING PERIOD | NUM OBS | M A X I M A<br>1 - HOUR |                 | ARITH MEAN | % >MDV |
|----------------------|------|-----------------|---------|-------------------------|-----------------|------------|--------|
|                      |      |                 |         | 1ST<br>MM/DD:HH         | 2ND<br>MM/DD:HH |            |        |
| Beulah - North       | 2005 | OCT-DEC         | 2172    | 21<br>11/08:01          | 14<br>12/07:17  | 2.4        | 93.7   |
| Bismarck Residential | 2005 | OCT-DEC         | 2080    | 36<br>12/20:08          | 36<br>12/21:07  | 8.4        | 100.0  |
| DGC #12              | 2005 | OCT-DEC         | 2123    | 18<br>11/08:02          | 18<br>12/09:23  | 2.5        | 96.2   |
| DGC #17              | 2005 | OCT-DEC         | 2164    | 34<br>10/15:18          | 26<br>11/08:01  | 1.7        | 75.2   |
| Dunn Center          | 2005 | OCT-DEC         | 2141    | 9<br>11/27:02           | 8<br>11/25:13   | 1.1        | 67.3   |
| Fargo NW             | 2005 | OCT-DEC         | 2028    | 36<br>12/21:07          | 36<br>12/22:09  | 6.2        | 89.2   |
| Hannover             | 2005 | OCT-DEC         | 2170    | 24<br>10/15:21          | 22<br>10/15:20  | 1.7        | 69.5   |
| Lostwood NWR         | 2005 | OCT-DEC         | 2182    | 24<br>12/18:02          | 22<br>12/18:01  | 1.3        | 43.5   |
| TRNP - NU            | 2005 | OCT-DEC         | 2185    | 9<br>10/28:15           | 9<br>10/28:16   | 1.1        | 65.4   |

The maximum 1-hour concentration is 36 ppb at Bismarck Residential on 12/20:08  
The maximum arithmetic mean was 8.4 ppb at Bismarck Residential

\* The air quality standards are:  
STATE - 53 ppb maximum annual arithmetic mean.  
FEDERAL - 53 ppb annual arithmetic mean.

COMPARISON OF AIR QUALITY DATA WITH  
THE NORTH DAKOTA AMBIENT AIR QUALITY STANDARDS \*

POLLUTANT : Ammonia (ppb)

| LOCATION       | YEAR | SAMPLING PERIOD | NUM OBS | M A X I M A       |                   |                   |                   |                   |                   |
|----------------|------|-----------------|---------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
|                |      |                 |         | 1ST               | 2ND               | 3RD               | 4TH               | 5TH               | 6TH               |
|                |      |                 |         | MM/DD:HH          | MM/DD:HH          | MM/DD:HH          | MM/DD:HH          | MM/DD:HH          | MM/DD:HH          |
| Beulah - North | 2005 | OCT-DEC         | 2162    | 197.3<br>12/12:13 | 163.3<br>12/12:14 | 156.1<br>12/11:20 | 134.9<br>12/15:08 | 124.0<br>11/16:11 | 123.1<br>12/15:09 |

\* No standard is currently in effect.

COMPARISON OF AIR QUALITY DATA WITH  
THE NORTH DAKOTA AMBIENT AIR QUALITY STANDARDS \*

POLLUTANT : Inhalable Continuous PM<sub>2.5</sub> Particulates (µg/m<sup>3</sup>)

| LOCATION             | YEAR | SAMPLING PERIOD | NUM OBS | M A X I M A      |                  |               |               |               |               | 24 - HOUR | 4TH | ARITH MEAN | 24HR #>65 | AM>15 |
|----------------------|------|-----------------|---------|------------------|------------------|---------------|---------------|---------------|---------------|-----------|-----|------------|-----------|-------|
|                      |      |                 |         | 1ST              | 2ND              | 1ST           | 2ND           | 3RD           | 4TH           |           |     |            |           |       |
|                      |      |                 |         | MM/DD:HH         | MM/DD:HH         | MM/DD         | MM/DD         | MM/DD         | MM/DD         |           |     |            |           |       |
| Beulah - North       | 2005 | OCT-DEC         | 2180    | 84.8<br>11/16:11 | 71.3<br>11/16:12 | 14.1<br>10/28 | 12.4<br>10/26 | 11.9<br>10/29 | 11.4<br>11/16 |           |     | 5.5        |           |       |
| Bismarck Residential | 2005 | OCT-DEC         | 2082    | 41.8<br>12/18:14 | 37.0<br>10/15:00 | 17.5<br>10/29 | 10.9<br>10/12 | 8.8<br>12/18  | 8.3<br>10/28  |           |     | 3.2        |           |       |
| Dunn Center          | 2005 | OCT-DEC         | 2147    | 16.9<br>12/12:09 | 16.5<br>10/26:08 | 9.8<br>10/26  | 6.7<br>10/25  | 6.6<br>10/28  | 6.6<br>10/29  |           |     | 2.1        |           |       |
| Fargo NW             | 2005 | OCT-DEC         | 2108    | 21.1<br>10/10:19 | 20.9<br>10/17:22 | 12.5<br>10/29 | 10.7<br>10/12 | 9.0<br>11/11  | 9.0<br>10/01  |           |     | 3.3        |           |       |
| Hannover             | 2005 | OCT-DEC         | 2165    | 34.8<br>10/29:00 | 34.2<br>10/28:23 | 14.0<br>10/29 | 12.4<br>10/12 | 12.1<br>10/28 | 10.5<br>10/26 |           |     | 5.4        |           |       |
| Lostwood NWR         | 2005 | OCT-DEC         | 2182    | 25.7<br>10/28:17 | 25.0<br>10/25:19 | 12.4<br>10/28 | 10.7<br>10/25 | 8.3<br>10/26  | 6.5<br>10/29  |           |     | 2.3        |           |       |
| TRNP - NU            | 2005 | OCT-DEC         | 2056    | 17.7<br>10/25:22 | 16.2<br>10/25:23 | 10.0<br>10/26 | 7.3<br>10/28  | 6.3<br>11/27  | 4.9<br>10/09  |           |     | 1.7        |           |       |
| TRNP - SU            | 2005 | OCT-DEC         | 2155    | 24.0<br>10/02:00 | 22.8<br>10/02:01 | 12.5<br>10/26 | 10.5<br>10/28 | 8.3<br>10/25  | 8.2<br>11/27  |           |     | 4.8        |           |       |

The highest 24-hour concentration is 17.5 µg/m<sup>3</sup> at Bismarck Residential on 10/29  
The highest Annual Mean concentration is 5.5 µg/m<sup>3</sup> at Beulah - North

\* The ambient air quality standards are:

FEDERAL Standards -

- 1) 24-hour: 3-year average of 98th percentiles not to exceed 65 µg/m<sup>3</sup>.
- 2) Annual: 3-year average not to exceed 15 µg/m<sup>3</sup>.

COMPARISON OF AIR QUALITY DATA WITH  
THE NORTH DAKOTA AMBIENT AIR QUALITY STANDARDS \*

POLLUTANT : Inhalable PM<sub>2.5</sub> Particulates (µg/m<sup>3</sup>)

| LOCATION             | YEAR | SAMPLING PERIOD | NUM OBS | MIN | M A X I M A<br>24 - HOUR |               |               | ARITH MEAN | #> 65 | AM>15 | % >MDV |
|----------------------|------|-----------------|---------|-----|--------------------------|---------------|---------------|------------|-------|-------|--------|
|                      |      |                 |         |     | 1ST<br>MM/DD             | 2ND<br>MM/DD  | 3RD<br>MM/DD  |            |       |       |        |
| Beulah - North       | 2005 | OCT-DEC         | 16      | 1.3 | 9.4<br>10/25             | 5.8<br>12/30  | 5.7<br>12/12  | 4.0        |       |       | 93.8   |
| Bismarck Residential | 2005 | OCT-DEC         | 29      | 1.4 | 18.7<br>11/27            | 10.0<br>12/21 | 9.7<br>10/28  | 5.1        |       |       | 96.6   |
| Fargo NW             | 2005 | OCT-DEC         | 30      | 1.8 | 17.6<br>11/27            | 14.7<br>12/21 | 13.5<br>10/13 | 6.4        |       |       | 90.0   |
| TRNP - NU            | 2005 | OCT-DEC         | 16      | 1.2 | 6.5<br>11/12             | 6.0<br>10/25  | 5.3<br>10/01  | 3.2        |       |       | 87.5   |
| TRNP - SU            | 2005 | OCT-DEC         | 16      | 1.1 | 5.7<br>10/25             | 5.2<br>11/12  | 4.1<br>10/01  | 2.9        |       |       | 81.3   |

The maximum 24-hour concentration is 18.7 µg/m<sup>3</sup> at Bismarck Residential on 11/27  
The highest annual average was 6.4 µg/m<sup>3</sup> at Fargo NW

\* The ambient air quality standards are:

FEDERAL Standards -

- 1) 24-hour: 3-year average of 98th percentiles not to exceed 65 µg/m<sup>3</sup>.
- 2) Annual: 3-year average not to exceed 15 µg/m<sup>3</sup>.



COMPARISON OF AIR QUALITY DATA WITH  
THE NORTH DAKOTA AMBIENT AIR QUALITY STANDARDS \*

POLLUTANT : Inhalable Continuous PM<sub>10</sub> Particulates (µg/m<sup>3</sup>)

| LOCATION             | YEAR | SAMPLING PERIOD | NUM OBS | 1 - HOUR          |                   | M A X I M A   |               | 24 - HOUR     |               | ARITH MEAN | 24HR #>150 | AM>50 |
|----------------------|------|-----------------|---------|-------------------|-------------------|---------------|---------------|---------------|---------------|------------|------------|-------|
|                      |      |                 |         | 1ST<br>MM/DD:HH   | 2ND<br>MM/DD:HH   | 1ST<br>MM/DD  | 2ND<br>MM/DD  | 3RD<br>MM/DD  | 4TH<br>MM/DD  |            |            |       |
| Bismarck Residential | 2005 | OCT-DEC         | 2195    | 84.0<br>11/28:06  | 55.0<br>12/18:14  | 30.3<br>10/29 | 28.4<br>10/27 | 27.8<br>10/28 | 26.8<br>10/26 | 10.5       |            |       |
| Dunn Center          | 2005 | OCT-DEC         | 2147    | 157.0<br>10/21:18 | 154.0<br>10/28:17 | 29.8<br>10/28 | 27.7<br>11/02 | 24.4<br>10/29 | 21.0<br>10/01 | 8.7        |            |       |
| Fargo NW             | 2005 | OCT-DEC         | 2107    | 184.0<br>10/28:14 | 153.0<br>10/10:19 | 49.8<br>10/28 | 48.5<br>10/01 | 42.5<br>11/11 | 36.2<br>10/17 | 13.9       |            |       |
| Lostwood NWR         | 2005 | OCT-DEC         | 2184    | 192.0<br>11/02:11 | 94.0<br>11/02:12  | 27.0<br>11/02 | 25.9<br>10/01 | 24.6<br>10/28 | 23.5<br>10/25 | 7.3        |            |       |
| TRNP - NU            | 2005 | OCT-DEC         | 2190    | 46.0<br>10/01:15  | 44.0<br>10/02:00  | 22.4<br>10/01 | 20.9<br>10/26 | 19.8<br>10/28 | 17.4<br>10/27 | 6.9        |            |       |

The highest 24-hour concentration is 49.8 µg/m<sup>3</sup> at Fargo NW on 10/28  
The highest Annual Mean concentration is 13.9 µg/m<sup>3</sup> at Fargo NW

\* The STATE and FEDERAL air quality standards are:

- 1) 150 µg/m<sup>3</sup> maximum averaged over a 24-hour period with no more than one expected exceedance per year.
- 2) 50 µg/m<sup>3</sup> expected annual arithmetic mean.



## SECTION THREE

### EXCEEDANCE LISTINGS

By Site Date Hour

All Units Are in Parts Per Billion Except Wind Direction (Degrees),  
Wind Speed (MPH), CO (PPM), and PM<sub>2.5</sub> and PM<sub>10</sub> (µg/m<sup>3</sup>)

The \* Identifies the Exceedances

NONE

By Date Hour Site

All Units Are in Parts Per Billion Except Wind Direction (Degrees),  
Wind Speed (MPH), CO (PPM), and PM<sub>2.5</sub> and PM<sub>10</sub> (µg/m<sup>3</sup>)

The \* Identifies the Exceedances

NONE